SOME NEW BOOKS.

Huxley's Biological Essays.

The latest addition to the collection of THOMAS H. HUXLEY'S works, now in course of publication by the Appletons, is a volume entitled *Discourses Biological and Geological*. The papers here reprinted, with some corrections and alterations, originally had the form of popular lectures or addresses delivered to scientific bodies with which the author was officially connected. The earliest of these seems to have been written as early as 1868, and the last was put forth in 1876. Wherever Prof. Huxley, however, has seen cause to change his opinion, he has been careful to indicate the grounds of the change in a footnote. It is hard to choose between eleven essays, every one of which is certain to be carefully perused, but perhaps the most widespread interest is likely to attach to those treating of the border territory between the animal and the vegetable kingdom, of the relation of paleontology to the doctrine of evolution, and of the formation of coal.

I.

Four distinctions were drawn by Cuvier in 1828 between animals and vegetables. The former, he said, were mobile, the latter not, and from the mobility of animals he deduced, by paleontological reasons, the necessity of the existence in them of an alimentary cavity or reservoir of food. The second great distinctive character of animals he found in the circulatory system, which, however, he recognized as less important than the digestive, since he knew it to be absent in the more simple animals. In the consumption of nitrogen by animals he placed the third distinction between them and the plants. In his belief, also, respiration, that is, the absorption of oxygen and the exhalation of carbonic acid, was a special function of animals, and constituted their fourth distinctive character. What has become of these distinctions in the light of the science of our day? At the present time innumerable plants and free plant cells are known to pass the whole or part of their lives in an actively locomotive condition in no wise distinguishable from that of one of the simpler animals, and while in this condition their movements are, to all appearance, as spontaneous—as much the product of volition—as those of such animals. Hence the teleological argument for Cuvier's first diagnostic character—the presence in animals of an alimentary cavity or internal pocket in which they can carry about their nutriment—has broken down, at least so far as his mode of stating it goes. With the advance, moreover, of microscopic anatomy, the universality of the fact itself among animals has ceased to be predicable. Many animals of even complex structure, which live parasitically within others, are wholly devoid of an alimentary cavity. Their food is provided for them not only ready cooked, but ready digested, and the alimentary canal, having become superfluous, has disappeared. Again, the males of most Rotifers have no digestive apparatus; as a German naturalist has remarked, they devote themselves entirely to the Minnedienst or sexual act, and are to be reckoned among the few realizations of the Byronic ideal of a lover. Finally, amid the lowest forms of animal life the speck of gelatinous protoplasm which constitutes the whole body has no permanent digestive cavity or mouth, but takes in its food anywhere, and digests, so to speak, all over its body. Nevertheless, although Cuvier's leading diagnosis of the animal from the plant will not bear a strict test, it remains one of the most constant of the distinctive characters of animals. If we substitute for the possession of an alimentary cavity the power of taking solid nutriment into the body, and there digesting it, the definition so changed will cover all animals, except certain parasites and the few and exceptional cases of non-parasitic animals which do not feed. On the other hand, the definition thus amended will exclude all ordinary vegetable organisms.

As to the second distinctive mark, a circulatory system, Cuvier himself practically gives it up when he admits that it is wanting in the simpler animals. The third distinction—that the consumption of nitrogen is peculiar to animals—is based on a completely erroneous conception of the chemical differences and resemblances between the constituents of animal and vegetable organisms, for which Cuvier is not responsible, as it was current among contemporary chemists. It is now established that nitrogen is as essential a constituent of vegetable as of animal living matter, and that the latter is, chemically speaking, just as complicated as the former. Starchy substances, cellulose and sugar, once supposed to be exclusively confined to plants, are now known to be regular and normal products of animals. Amylaceous and saccharine substances are largely manufactured, even by the highest animals; cellulose is widespread as a constituent of the skeletons of the lower animals, and it is probable that amyloid substances are universally present in the animal organisms, though not in the precise form of starch.

We come lastly to respiration, and we find that, although it remains true that there is an inverse relation between the green plants in sunshine and the animals, in so far as that, under the circumstances, the green plant decomposes carbonic acid and exhales oxygen, while the animal absorbs oxygen and exhales carbonic acid, yet the exact researches of modern chemical investigators of the physiological processes of plants have clearly demonstrated the fallacy of attempting to draw any distinction between animals and vegetables on this ground. In fact, the difference vanishes with the sunshine, even in the case of the green plants, which, in the dark, absorb oxygen and give out carbonic acid, like any animal. On the other hand, those plants, such as the fungi, which contain no chlorophyll and are not green, are always, whether in the dark or in the sunshine, so far as respiration is concerned, in the exact position of animals. They absorb oxygen and give out carbonic acid. There is, in truth, every reason to believe that all living plants, like living animals, always respire in sunshine or in the dark, and, in respiring, absorb oxygen and give off carbonic acid; but that, in green plants exposed to daylight or to the electric light, the quantity of oxygen evolved in consequence of the decomposition of carbonic acid by a special apparatus which green plants possess exceeds that absorbed in the concurrent respiratory process.

Thus, by the progress of knowledge, Cuvier's fourth distinction between the animal and the plant has been as completely invalidated as the third and second; and even the first can be retained only in a modified form, and subject to exceptions. But has the advance of biology simply tended to break down old distinctions without establishing new ones? With one qualification, the answer to this question is undoubtedly in the affirmative. The qualification comes in view when we note the wide basis of fact for the generalization that plants are essentially characterized by their manufacturing capacity, by their power that is, of working up mere mineral matters into complex organic compounds. Contrariwise, there is no less wide foundation for the generalization that animals depend directly or indirectly upon plants for the materials of their bodies, that is, that either they are herbivorous or they eat other animals which are herbivorous. But for what constituents of their bodies are animals thus dependent upon plants? Certainly not for their horny matter, nor for chondrin, the proximate chemical element of cartilage; nor for gelatine; nor for syntonin, the constituent of muscle; nor for their nervous or biliary substances; nor for their amyloid matters; nor necessarily for their fats. It can be experimentally demonstrated that animals can make these for themselves. But that which they cannot make, but must in all known cases obtain directly or indirectly from plants, is the peculiarly nitrogenous matter, protein. Thus the plant is the ideal proletarian of the living world, the worker who produces; the animal is, by comparison, the ideal aristocrat who mostly occupies himself in consuming. Here lies the last hope of finding a sharp line of demarcation between plants and animals; for, as Mr. Huxley has made clear in the essay before us, there is a border territory between the two kingdoms, a sort of no man's land, the inhabitants of which certainly cannot be discriminated and brought to their proper allegiance in any other way. An accumulation of the data relevant to the question [illegible] to the conclusion that no such sharp line can be drawn. He shows that if we start from a certain low stage of life upon the animal side, and from a correspondingly low stage of life upon the plant side, we shall find such an insensible series of gradations leading us to the monad (of which neither animal nor vegetable characteristics can be predicated) that it is impossible to say at any stage of the progress where the line between the animal and the plants must be drawn. There is reason, indeed, to think that certain organisms which pass through a monad stage of existence are, at one time of their lives, dependent upon external sources for their protein matter, or are animals, and at another period manufacture it, or are plants. And seeing that the whole progress of modern investigation is in favor of the doctrine of continuity, Prof. Huxley deems it a fair speculation—though, as yet, it is only a speculation—that as there are some plants which can manufacture protein out of such apparently intractable mineral matters as carbonic acid, water, nitrate of ammonia, metallic and earthy salts, while others need to be supplied with their carbon and nitrogen in the somewhat less raw form of tartarate of ammonia and allied compounds, so there may be yet others, as is possibly the case with the true parasitic plants, which can only manage to put together materials still better prepared—still more nearly approximated to protein—until we may arrive at such organisms as the Panhistophyton, which are as much vegetable as animal in structure, but are animal in their dependence on other organisms for their food. The sum of all is, according to the evidence collected, that the difference between animal and plant is one of degree rather than of kind, and that the problem, whether in a given case an organism is an animal or a plant, may be essentially insoluble.

II.

The discourse on the relation of paleontology to the doctrine of evolution was originally delivered in the form of an address to the Geological Society, of which Mr. Huxley was then President. The essay occupies nearly fifty pages of this volume, but the threads of the argumentation are ultimately drawn together in a connected hypothetical view of the manner in which the distribution of living and extinct animals has been brought about. The author conceives that distinct provinces of the distribution of terrestrial life have been in existence since the earliest period at which that life has been recorded, and possibly much earlier, and he supposes, with Mr. Darwin, that the process of modification of terrestrial forms is more rapid in areas of elevation than in areas of depression. He takes it to be certain that Labyrinthodont amphibia existed in the distributional province, which included the dry land depressed during the carboniferous epoch, and he believes that in some other distributional provinces of that day which remained in the condition of stationary or of increasing dry land, the various types of the terrestrial sauropsida and of the mammalia were gradually developing.

The permian epoch marks the commencement of a new movement of upheaval, in the area of which England now forms a part, which attained its maximum in the triassic epoch when dry land existed in North America, Europe, Asia, and Africa, as it does now. Into this great new continental area, the mammals, birds, and reptiles developed during the paleozoic epoch, spread, and formed the great triassic arctogeal province. But at the end of the triassic period, the movement of depression recommenced in the area now represented by the European continent, though it was doubtless balanced by elevation elsewhere; modification and development, checked in the one province, went on in that "elsewhere," and the chief forms of mammals, birds, and reptiles, as we now know them, were evolved and peopled the mesozoic continent. Mr. Huxley conceives Australia to have become separated from that continent as early as the end of the triassic epoch, or not much later. The mesozoic continent must, in his opinion, have lain to the east, about the shores of the North Pacific and Indian oceans, and he is inclined to believe that it continued along the eastern side of the Pacific area to what is now the province of Austro-Colombia, the characteristic fauna of which represents a remnant of the population of the latter part of this period.

Toward the latter part of the mesozoic period the movement of upheaval around the shores of the Atlantic once more recommenced and was probably accompanied by a depression around those of the Pacific. The vertebrate fauna, elaborated in the mesozoic continent, moved westward, and took possession of the new lands, which gradually increased in extent up to and in some directions after the miocene epoch. The author deems it in favor of this hypothesis that it is consistent with the persistence of a general uniformity of the position of the great masses of land and water. From the Devonian period, or earlier, to the present day, the four great oceans, Atlantic, Pacific, Arctic, and Antarctic, may have occupied their present positions, and only their coasts and channels of communication have undergone an incessant alteration. Moreover, the hypothesis here outlined requires no supposition that the rate of change in organic life has been either greater or less in ancient times than it is now, nor any assumption, either physical or biological, which has not its justification in analogous phenomena of existing nature.

III.

In a lecture on the formation of coal, delivered at the Philosophical Institute in Bradford, the author reviews the main facts connected with the origin of this substance and its accumulation during the carboniferous epoch, and finds that they suggest the following considerations: In the first place, the great phantom of geological time rises before the student of this as of every other fragment of the history of the earth, springing irrepressibly out of the facts, like the Djinn from the jar which the fisherman so incautiously opened, and, like the Djinn again, being vaporous, shifting, and indefinable, but unmistakably gigantic. However cautious and modest may be the bases of one's calculations, the minimum of time assignable to the coal period remains something stupendous. If, for instance, we adopt Principal Dawson's conservative assumption that one foot of coal represents fifty generations of coal plants, and, further, make the moderate supposition that each generation of coal plant took ten years to come to maturity, then each foot thickness of coal represents five hundred years. Now, the superimposed beds of coal in one coal field may amount to a thickness of fifty or sixty feet, and therefore the coal alone in that period represents five hundred multiplied by fifty—that is to say, twenty-five thousand years. The actual coal, however, is but an insignificant portion of the total deposit, which may amount to between two and three miles of vertical thickness. Suppose it be twelve thousand feet, which is 240 times the thickness of the actual coal, is there any reason why we should believe it may not have taken 240 times as long to form? Mr. Huxley knows of none. But, in this case, the time which the coal fields represent would be six million years. As affording a definite chronology, of course, such calculations as these are valueless; but they have much use in fixing one's attention upon a possible minimum.

Another consideration which the study of coal brings prominently before the mind is that the coal flora, viewed in relation to the enormous period of time which it lasted, and to the still vaster period which has elapsed since it flourished, underwent little change while it endured, and, in its peculiar character, differs strangely little from that which at present exists. The same species of plants are to be met with throughout the whole thickness of the coal field, and the youngest are not sensibly different from the oldest. More than this: notwithstanding that the carboniferous period is separated from us by more than the whole time represented by the secondary and tertiary formations, the great types of vegetation were as distinct then as now. The structure of the modern club moss furnishes a complete explanation of the fossil remains of the lepidodendra and the fronds of some of the ancient ferns are hard to distinguish from existing ones. At the same time, it must be remembered that there is nowhere in the world at present any forest which bears more than a rough analogy with a coal forest. The types may remain, but the details of their form, their relative proportions, and their associates are all altered. The tree fern forest of Tasmania or New Zealand gives one only a faint and remote image of the vegetation of the ancient world.

Then, too, the study of a coal field inculcates a lesson of geological history, which invariably recurs at whatever point it is taken up; the lesson of the almost infinite slowness of the modification of living forms. The lines of the pedigrees of living things break off almost before they begin to converge. Yet one more curious consideration is suggested; namely, that nature is never in a hurry and seems to have had always before her eyes the adage: "Keep a thing long enough and you will find a use for it." She has kept her beds of coal many millions of years without being able to find much use for them; she has sent them down beneath the sea, and the sea beasts could make nothing of them; she has raised them up into dry land and raised the black veins bare, and still for ages and ages there was no living thing on the face of the earth that could see any sort of value in them; and it was only the other day, so to speak, that she turned a new creature out of her workshop who, by degrees, acquired sufficient wits to make fire, and then to discover that the black rock would burn. Mr. Huxley deems it probable enough that the primeval Briton, when Cæsar landed, nineteen hundred years ago, may have known that the strange black stone, of which he found lumps here and there in his wanderings, would burn, and so help to warm his body and cook his food. But nature had still to wait very many centuries for a full return of the capital she had invested in the ancient club mosses. At last the eighteenth century arrived and with it James Watt. The brain of that man was the spore out of which was developed the modern steam engine, and all the prodigious trees and branches of modern industry which have grown therefrom. Of this growth and development coal is as essential a condition as carbonic acid is for that of a club moss. Wanting coal, Englishmen could not have smelted the iron needed to make their engines, nor have worked their engines when they had got them. Take away the engines, and the huge towns of Yorkshire and Lancashire would vanish like a dream. Manufactures would give place to agriculture and pasturage, and not ten men could live where now ten thousand are amply supported. What becomes, however, of the coal which is burnt in yielding this interest upon nature's investment? Heat and light come out of it, and if we could gather together all that goes up the chimney and all that remains in the grate of a thoroughly burnt coal fire, we should find ourselves in possession of a quantity of carbonic acid, water, ammonia, and mineral matters exactly equal in weight to the coal. But these are the very matters with which nature supplied the club mosses which made the coal. To her is thus paid back principal and interest at the same time, and she straightway reinvests the carbonic acid, the water, and the ammonia in new forms of life, feeding with them the plants that now exist.

Napoleon's Aide-de-Camp's Memoirs.

The extraordinary revival of interest in Napoleonic literature has caused a republication of the *Memoirs of Gen. de Ségur*, which formed one of the eight volumes that appeared in 1873, just after the author's death. That work undertook to set forth a complete history of Napoleon, on the one hand, and, on the other, the writer's personal recollections. The latter are now, for the first time, issued in a separate form (Paris, Firmin-Didot et Cie). The book is an indispensable complement of Méneval's reminiscences, for, while Méneval revealed Napoleon as he appeared in his workroom to his private secretary, Ségur shows him to us on the field of battle, and helps us to appreciate the combination of qualities which made him on the whole the greatest commander that the world has ever seen. We can only direct attention at this time to a few of the facts and reflections set down by an eye witness in this volume of 450 pages, but we can follow the author in his capacity of aide-de-camp as far as the great victory at Austerlitz. We do not know whether these memoirs have ever been separately published in an English translation, but it is certain that, if they have hitherto been unknown to English readers, they should remain so no longer.

I.

A preliminary word should be said about the author, in order that we may measure his qualifications and obtain his point of view. Count Philippe de Ségur, General of Division, Peer of France, and Academician, was born in 1780, and died in 1873. His life lasted nearly a century, and he attained a remarkable distinction in war, politics, and literature. Entering the army as a common soldier in 1800 at the age of 20, he became a General in February, 1812, and never stopped fighting until the end of the imperial epoch. He went through all the wars of the Empire, either in the headquarters staff of Napoleon or at the head of a picked corps. Almost as much devoted to literature as to art, he occupied his leisure after the peace in the composition of numerous works and published in 1824 his account of the Russian campaign, which made a great noise all over Europe. We have already mentioned his principal work entitled "History, Memoirs and Miscellanies," which appeared in eight volumes, twenty-one years ago. In even the briefest notice of the author, we should not overlook his father, Count de Ségur, the famous ambassador at the Court of the Great Catherine II., who negotiated the first treaty between France and Russia, and was one of the first French combatants in our Revolutionary War. Under Napoleon he became a Councillor of State and Grand Master of the Ceremonies, an Academician, and ultimately a peer of France. He was himself the son of the Maréchal de Ségur, the hero of Laufeld and of Clostercamp and Minister of War to Louis XVI. during the American war.

The author of this volume was but 9 years old when the States-General assembled in 1789, and much of his youth was passed amid the poverty and proscriptions which were the lot of the adherents of the *ancien régime*. Philippe de Ségur was the first of the young men who mingled with the remnant of the old society which in 1800 had begun once more to frequent the Faubourg St. Germain, to take service under the tricolor at the risk of becoming a traitor and an outcast in the eyes of his friends. It was evidently the blood of the old Marshal, his grandfather, who was still living, riddled with wounds, that called the grandson to the battlefield. It seems that he had been drawn by curiosity to the Tuileries, at the very hour when Napoleon, obeying the summons of the Council of the Ancients, began the revolution of the 18th Brumaire by haranguing the garrison of Paris, to make sure of it, against the Directory and the Council of Five Hundred. As Ségur stood peering into the garden a gate opened, and he saw a regiment of dragoons pour forth, helmet on head and sabre in hand, and full of the martial exaltation that soldiers show when they mean to win or die. The author tells us that the sight of them made the blood boil in his veins, and from that moment he was determined to take service in the ranks. He hoped, however, that the day of his enlistment would be that of his departure from Paris, for thus he would leave behind him, without hearing it, the explosion of disapproval that he dreaded. The contrary, however, happened. An appeal dictated rather by political than military motives had been made to young men of good family that they should arm and equip themselves at their own expense. Gen. Dumas, a friend of the writer's father, had charge of this organization. Young Ségur went to him and secretly put his name on the list. It was only on his return from this first decisive step that he confided his intention to his father. The latter approved the act, and kept the secret as long as this was possible, but presently the hour of public enrollment at the Hotel de Ville took place. Young Ségur's subsequent reception in the Faubourg St. Germain was worse even than he had expected, one of his nearest relatives declaring that he was dishonored. The excess of severity revolted and excited him, and he defended his acts so well that several of the young nobles came over to his side and enlisted in their turn. Thus began the first admixture of the old society with the new, and it was unquestionably due to the example given by young Ségur that, after serving for a few months in the ranks of a body known as the volunteers of Bonaparte, he was appointed a sub-Lieutenant. We should mention that it was not only the reproaches of the Faubourg St. Germain which Ségur had to confront: he had also to return to Chatenay, where his family were living in humble circumstances, to give an account of his performance to his grandfather, the old Marshal de Ségur. The author tells us he got there early in the morning and approached the old man's bed in the most submissive attitude. "You have turned your back," said the Marshal, at first coldly, "on all the traditions of your ancestors; but what is done is done, remember that. You have voluntarily enrolled yourself in the republican army. It is henceforth your business to serve it with unswerving loyalty." Seeing the lad burst into tears, the old man's voice trembled, and with his sole remaining hand taking his grandson's he pressed him to his heart. Then giving him twenty louis, almost all he had in the world, he added: "Here, take this to help complete your equipment. Go, and at all events sustain with courage and fidelity, under the flag you have seen fit to choose, the name you bear and the honor of your family."

II.

Ségur's first service in the field was in Switzerland under Macdonald, whom he accompanied on a visit to Moreau not long before the battle of Hohenlinden. He was present at a dinner given by Moreau to Macdonald, and noted the signs of jealousy inspired in many of the Generals by the continually increasing power of the First Consul. The dislike of Bonaparte was so intense and so outspoken that one of the Commanders-in-Chief did not hesitate to utter a slur upon one of his sisters, which was caught up and emphasized by the other guests. Young Ségur was naturally affected by the atmosphere in which he found himself, and gradually became a partisan of the republican cabal against Napoleon. At the bottom of this cabal, he says, there was not only much ambitious rivalry, but some sincere republicanism. In the armies commanded by Moreau and Macdonald you could still find, he tells us, some of the so-called Spartiates du Rhin, volunteers of the first years of the republic, martyrs of liberty and national independence, to which they had sacrificed themselves with a devotion free from any personal ambition. A hundred times had they been seen, after surmounting the worst perils, refusing the highest grades, tossing them from one to the other, and, proud of their rigorous republican probity, marching naked and hungry to victory. These men had made it a point of honor to remain poor in the midst of triumphs. Nevertheless, since 1796 and 1797 the spirit even of the army of the Rhine had been modified by the continuity of war, the seduction of renown, and the contagion of great fortunes. By 1800, when Ségur arrived, there remained but few of the primitive patriots who abjured all private interests; the survivors of them were to be recognized by the simplicity of their garments and of their mode of life, by the austere gravity and independence of their attitude, as also by a certain air of haughty, bitter, and disdainful surprise at the view of the growing luxury and of all the self-seeking passions that were replacing the disinterested devotion of an earlier day.

After Macdonald's remarkable passage of the Alps and conquest of the Tyrol, he was persuaded by the First Consul, who desired to separate the republican malcontents from the army, to accept a diplomatic mission to Copenhagen, and Ségur accompanied him thither in the capacity of attaché. On his return, influenced by the partisans of Moreau, Bernadotte, and Macdonald, the young man became almost a revolutionist. Paris at that time (1802) was full of staff officers, impatient of inactivity, and irritated at what they called the dictatorship and usurpation of Bonaparte. They denounced as counter-revolutionary his measures in favor of the émigrés and for the reëstablishment of the Catholic religion. Ségur was a witness of their indignation at Notre Dame when a Te Deum was sung for the Concordat, which had been signed some months before. He did not sufficiently blame, he tells us, the reply made by Delmas to Bonaparte: "Yes, a fine priest's show, no doubt. It is too bad that it cannot be witnessed by the million men who lost their lives to destroy what you are restoring." The author recalls brutally impertinent speeches made by several other Generals at the Tuileries, even in Napoleon's hearing, and the fact that, as the cortége, on its return from the cathedral, was passing near a group of officers, the repeated greetings of the First Consul were treated with disdain. It was, it seems, a coarse remark of Moreau's which first opened Ségur's eyes to the false line that he was taking. He was present, he tells us, when Moreau was discussing with a fellow officer the condition of the French army in the time of Louis XV. Ségur was listening to Moreau's opinions as if they were oracles, though there was nothing striking about them, for the General's language was as common as his manners, when, all at once, forgetting or ignoring his young auditor's relationship, Moreau applied contemptuous and filthy terms to all the Generals of the *ancien régime*, without exception. This insult to the Maréchal de Ségur, for whom the grandson was then wearing mourning, made the blood mount to his face. He never saw Moreau afterward, except during the latter's trial, when a sense of decorum caused the young man to keep out of sight. We are told that there was nothing of the kind to dread from Beurnonville or Macdonald; nevertheless, on returning home and telling his father what had occurred, the young man was invited to compare the rancorous coarseness of Moreau with the greatness of soul evinced by Napoleon, who had profited by the festival of July 14, 1801, to inter at the Invalides the remains of Turenne. Attention was also directed to Napoleon's effort to rehabilitate and rally to his support all the aristocratic victims of revolutionary proscription, and the elder Ségur related how, during his son's sojourn in Denmark, Napoleon, having learned in what destitution the old Maréchal de Ségur was living, had bestowed on him a pension and given him a noble reception when the old warrior visited the Tuileries to thank the First Consul. Bonaparte, it seems, had advanced to meet him, had treated him, during their short interview, with the utmost deference, and, leading him down the stairway, had ordered the guard to present arms, the drums to beat, and all the military honors to be paid which had once been due to the rank, then abolished, of Marshal. The contrast between the petty spite shown by Moreau and Bonaparte's testimony of respect for the old man who personified the glory of the *ancien régime* touched young Ségur deeply. His eyes were opened, and they beheld in Bonaparte the veritable rallying point which he had longed for, and which offered a chance of salvation to the remnant of the old society. No doubt the change in his ideas soon became known to Napoleon, for, after sending him on an errand of some importance to Madrid, he gave him an appointment on his own staff, which involved the duty of commanding every day the third guard that watched over the First Consul. We are told that the first contact that the young man of 22 had with the soldiers who were to obey his orders was embarrassing. The members of the guard at that time were veterans selected not only for their remarkable stature, but for the distinction which they had won upon the battlefield. It was not, therefore, without a painful effort that young Ségur, appearing for the first time before these soldiers, managed to assume the air of assurance and the tone of authority required for military command. After the first moment, however, the difference of origin and education proved no obstacle to his success, and the fact leads him to remark that, in spite of the class war which still raged with vehemence, he always found that, provided certain precautions were taken, an illustrious name was an advantage.

III.

There is no scandal in these memoirs, but the author's account of the First Consul's private life is not, on that account, less interesting, and is probably more trustworthy. He notes that for a time two parties divided the First Consul's household, but their bickerings and recriminations were restrained by the firmness of the head of the family. On the one side were the Beauharnais, the relatives of Josephine; on the other, Napoleon's own family. The marriage of Louis Bonaparte with Hortense de Beauharnais, which took place on July 27, 1802, was expected to heal the schism, but the domestic peace proved as little durable as the repeated attempts at international tranquillity. For a little while, however, this union and several other marriages among the young people of Napoleon's circle gave a merry and joyous tone to the mode of life at the modest court. The well-known physical and mental charms of the First Consul's sisters, the grace and fascination characteristic of Mme. Bonaparte and of her daughter, the remarkable beauty of the young women who completed the assemblage, and, above all, the presence of a hero, gave an indefinable attraction to a society which was trammelled by no etiquette except the traditions of good company. As to the pleasures of the new court, these would be, we are told, of mornings at Malmaison, house games, in which Napoleon took part; in the evening, games again and conversation sparkling with wit and originality. The revolution, philosophy, and, above all, the East were the favorite subjects of the First Consul's talk. How many times, says Ségur, would even the youngest women forget the lateness of the hour, and sit as if enchained to his admirable narratives, and as if they could see the things which he described. One evening at St. Cloud, while he depicted the desert, Egypt, and the defeat of the Mamelukes, Napoleon, seeing his young aide-de-camp hanging upon his words, stopped short, and taking from a table a medal representing the Battle of the Pyramids, said, "You were not there, young man?" "Alas, no," answered Ségur. "Well, keep this," said the First Consul, "and remember all that it recalls." Such was Napoleon's habitual amenity, and Ségur recollects how, when the loud laughter in the Salon interrupted the work that the First Consul was doing in a neighboring room, he would partly open the door and complaining good-naturedly of such interruption, beg his friends to make a little less noise. Another of the household pleasures was the playing of drawing-room comedy, in which his adopted children as well as the officers of his staff took part. He himself would sometimes watch the rehearsals that were directed by celebrated actors like Michaud, Molé, and Fleury. The final performances took place at Malmaison, and were followed by concerts, and often by little balls. Napoleon himself would dance as gayly as the youngest, now and then asking the musicians to play the airs by that time out of fashion, which recalled to him his youth. It was these soirées which always ended about midnight, that gave rise to absurd reports about lessons in dancing and in attitudes that the First Consul was taking, it was said, from various actors. As a matter of fact his participation in the final pleasures of the evening never lasted, according to Ségur, more than a few moments, after which he devoted himself to serious affairs. The house games at Malmaison were the first to stop; the want of decorum evinced by a distinguished artist put an end to them. The other pleasures, which were always decorous, continued during the autumn of 1802 and the ensuing winter. Scarcely were they interrupted by the First Consul's journey to Rouen and afterward to Havre. Subsequently and gradually, however, the multiplicity of affairs, and the more serious aspect they acquired through England's resumption of a hostile attitude made these merry recreations out of place. Then came the elevation of the First Consul to the imperial dignity, which imposed more etiquette, emphasized social distances, and diminished the charm of his domestic life. An incident which happened in 1803 changed to reserve the abandon with which the young people of the court had entered into their amusements. During the First Consul's absence in Belgium they plunged with too little circumspection into the pleasures of the capital. There were dinners, picnics, and theatre parties, and even some giddy expeditions to the public balls, where young and high-placed women might easily have been recognized and compromised. According to Ségur there was nothing in all this but the imprudence of schoolgirls just escaped from the hands of their preceptress, but their husbands were absent and malicious reports alarmed them. However exaggerated and false these were, they had an evil effect on the suspicious nature of Louis Bonaparte, and thus began the jealousy which, as Ségur contends, had no foundation. The author cannot say whether the First Consul was importuned with complaints about the matter, but the fact is that, soon after his return, most of the young officers of his household were despatched on various missions and transformed from men of pleasure into men of usefulness. Ségur, for his part, was sent with Gen. Duroc to Berlin, and he recalls the admiration with which he was inspired by the handsome and witty Queen of Prussia, in an audience which, thanks to her remembrance of his father, he had the honor of obtaining. "It seems to me," he says, "that I can still see this princess, half reclining on a rich sofa; a three-legged gilded stool was near her; a thin robe of Oriental purple, lightly covered, yet allowed to be discerned her elegant and graceful form. There was in the sound of her voice a sweetness so melodious, in her words a seduction so amiable and touching, and in her attitude so much charm and magnetism that it rendered me speechless for some moments. I fancied myself in the presence of one of those apparitions whose enchanting loveliness has been traced for us in antique fables. Could I then foresee that three years later this same queen, attired for war in a riding habit, would be flying before our squadrons, and that I myself, after the battle of Jena, penetrating in a final charge the heart of Weimar, should be on the point of making her a prisoner."

IV.

The author of these memoirs accompanied Napoleon as aide de camp through the campaigns of Ulm and Austerlitz, which really formed a continuous series of operations, but which, by an imperial decree, were to count for the soldiers as two campaigns. It is well known that the outcome of the first campaign was not only the surrender of Ulm by Marshal Mack, but the loss of an Austrian force amounting to 88,000 men which had been commanded by that General. It is also known that all the operations tending to this result had been planned in detail beforehand, and were punctually carried out. The scheme was the same as that at Marengo, but much less rash. There were no Alps to traverse or repass, and Napoleon had far more soldiers at his disposal than had Mack, instead of an army weaker by one-half than that of Melos; there was, moreover, the greatest difference between the Austrian Generals. In the campaign of which Ulm was the pivot success was due not only to the remarkable strategic and tactical skill of Napoleon, but to the inconceivable stupidity and irresolution of his adversary. Several incidents of which Ségur was an eyewitness show how Napoleon endeared himself to his soldiers. In a desperate conflict which took place at the foot of Michel's Berg, the real rampart of Ulm, the Emperor had advanced to a point where he found himself surrounded by the dead and wounded. With difficulty he made his way through them, when, hearing the wounded interrupt their groans to greet him with their accustomed salutations, he stopped. Among the dying was an artilleryman whose hip had been shot off. The Emperor noticed it, approached, and, detaching his own star of the Legion of Honor, put it in his hands, saying: "Take it, it belongs to you, as well as a place in the Hotel des Invalides. Take courage, you may yet live happy there." "No, no," replied the soldier, "I have bled too much. But, all the same 'Vive l'Empereur!'" Not far off a former grenadier of the army of Egypt lay dying on his back, his face exposed to the rain which was falling in floods. In the exultation of combat, he still cried "Forward!" to his comrades. The Emperor passing recognized him, and, pulling off his own cloak, put it over him. "Try to bring it back to me," he said, "and, in exchange, I will give you the decoration and the pension you deserve." Another anecdote: One evening Ségur found the Emperor in an isolated farmhouse sleeping by the side of a stove, the other side of which was occupied by a young drummer, also asleep. Surprised at the sight, he learned that on Napoleon's arrival his attendants had wished to send the boy away, but that the drummer had refused, saying that there was room enough for every one that he was cold and wounded, that he was well off there, and meant to stay. Napoleon hearing this, broke into laughter, and ordered them to leave the boy upon his chair; so that the Emperor and drummer lay there sleeping opposite each other surrounded by a circle of Generals and great dignitaries standing upright and awaiting orders.

It seems that after the surrender of Ulm, while the long line of Austrian soldiers defiled between the French ranks, the Emperor kept near him the Austrian Generals. His demeanor and language were gentle, kindly, even caressing. He sought to console them for their reverses, and said to them that war had its chances, that having often been conquerors they should be able to console themselves for being sometimes conquered, that this war in which their master had engaged them was unjust and groundless, and that frankly he knew not why he fought or what was desired of him. There came a moment when one of these Generals, observing that Napoleon's uniform was covered with mud, referred to the hardships which he must have suffered in the campaign. "Your master," replied the Emperor, smiling, "wished to remind me that I was a soldier; I hope he will admit that the imperial purple has not caused me to forget my trade." It seems that Mack was a witness of this scene. One of the French officers, curious to see the victim of so great a misfortune, asked the General himself, whom he did not know, to point out the Austrian commander. The Field Marshal replied, "You see before you the unhappy Mack." Unhappy, indeed, for never before, and never since, except in the case of Bazaine at Metz, has a fortress defended by so large a force been surrendered.

V.

On the march from Ulm toward Vienna there was a halt of some days at Lintz, and here the Emperor and his aide de camp witnessed an incident which was rare in the Napoleonic army, in which discipline was furthered by the community of origin between the soldier and the officer, and by an intelligent emulation. Napoleon was galloping past a column of light artillery when some twenty steps before him he saw an artilleryman raise in a threatening way his head, which at the same instant was almost wholly lopped off by his Captain with a furious blow of the sabre. The head of the poor wretch hung for an instant on his shoulders and then fell upon the ground amid a torrent of blood. At this frightful spectacle Napoleon turned pale and, rushing forward, cried: "What have you done there, Captain?" "My duty," rejoined the officer rudely, "and until I am killed by one of my soldiers," he added haughtily, looking them in the face, "I will serve in the same way those who fail to obey their Captain." The Emperor, struck with the man's energy, remained an instant dumb, but presently, mastering his emotion, resumed in a firm voice, "If such is the case, you have done well. You are a brave officer. You understand your duty. That is how I want to be served."

At Lintz the Prince of Lichtenstein appeared on the part of the Austrian Emperor to ask for an armistice, and in a conversation with M. de Thiard, he made a suggestion, the reception of which by Napoleon shows that the latter was, at that time, far from contemplating a marriage with an Austrian archduchess. Lichtenstein questioned Thiard about the rumor (which, as we know, was well founded), that a Bavarian princess had been requested for Prince Eugene, and went on to ask, "Why should you stop half way in such a path? Has not Vienna also nubile princesses? Might not a peace be sealed by another marriage?" On these words being reported to him, Napoleon cried, "An Austrian princess! Never! France would revolt at it! It would recall Marie Antoinette." Asked how he came to be chosen as the medium of such a proposal, Thiard explained that when he had served in the army of Condé he had often fought under the eyes of Lichtenstein, and that, speaking German as well as French, he had several times been employed as an intermediary between the Austrians and Duke d'Enghien. At this name Napoleon forgot the subject of the conversation, and interrogated Thiard minutely touching the character, mind, and military talent of the unfortunate prince, and he did this with an air of natural, calm, and curious interest, as if he were speaking neither of his own victim nor to that victim's friend. The replies of Thiard were sincere, and his eulogy of the Duke was so earnest that Napoleon cried: "Why, he was really a man, then, that prince?" Then, with unwavering serenity, he dismissed his interlocutor. Thiard told Ségur the same day that this was the second time he had conversed with the Emperor on the subject. The first conversation had taken place at the time of the Duke d'Enghien's execution, and he said that then, just as at Lintz, Napoleon's attitude and features and the sound of his voice had been calm and imperturbable. Ségur makes the following comment on this incident: "Astonished at such a singular inflexibility, especially when we recalled so many proofs of kindness, generosity, and sensibility, we asked ourselves whether this impassibility was due to some defect of conscience or to political calculation. Was it the effect of a return to the customs of his native island? Did he suppose himself to have the right to avenge one crime by another crime? Or rather, under his apparent calm, was he persevering in his purpose, of averting other plots against his own life, considering the cruel deed done at Vincennes as a just reprisal for the preceding endeavors to assassinate him, and as a useful threat against such demonstrations in the future?"

The French had discovered before reaching Austerlitz that the Russian infantry was much superior to the Austrian, and the Russians on their part had not a doubt of success. In an interview between Napoleon and Dolgorouki, the favorite of Alexander, the young Russian exhibited intolerable arrogance. His master, he said, would not consent to peace except upon condition that Napoleon should abandon Italy, the left bank of the Rhine, and Belgium. "What, Brussels, also?" replied Napoleon; "why, we are in Moravia, and, if you were on the heights of Montmartre, you would not get Brussels." The utmost that Dolgorouki would offer was to let the French retire safe and sound behind the Danube, if they would promise to evacuate forthwith Vienna and the hereditary States of the Hapsburgs. At this insolence Napoleon, unable longer to restrain himself, cried: "Withdraw, sir, and tell your master that I am not accustomed to let myself be insulted in this way." The Russians were counting not only on their military efficiency, but on a marked superiority of numbers. At Austerlitz, Napoleon had but 65,000 soldiers against 90,000. But the arrangement of the French force more than made up for the numerical difference. The over-confidence of the Russians betrayed them into grave strategical and tactical errors, and the result, as we know, was their destruction. It is interesting to learn that the night before the battle the Emperor gave a supper to a large number of Marshals and Generals, and, contrary to his habit, remained a long time at the table. Ségur listened eagerly, taking for granted that the great event of the morrow would form the subject of the conversation. Just the contrary happened. With his first word the Emperor, addressing Junot, who piqued himself on possessing some knowledge of literature, turned the talk on dramatic poetry. Junot having replied by referring to several new tragedies, Napoleon, as if he had forgotten the Russian army and the morrow's battle, entered with heat into the discussion, and declared that, in his view, none of the recent authors had grasped the new principle which must serve as a basis for modern tragedy. He went on to say that, in our day, when the prestige of the pagan religion was extinguished, another motive force was needed for the tragic stage. Politics, he thought, should be the mainspring of modern tragedy. It was politics which ought to replace the antique fatality, that fatality which renders Œdipus criminal without being culpable, and which interests us in Phèdre by imputing to the gods a part of her weakness and her crime. Napoleon insisted that it was an error to believe tragical subjects exhausted; that plenty of them were to be found in the necessities of statecraft; that one ought to know how to feel and touch that chord, and that, in this principle, an abundant source of strong emotion and a fecund germ of critical situations, in a word, another fatality as imperious as that of the ancients might be found. Thus it would come to pass that what is called a coup d'état, a political crime, would become a subject of tragedy, wherein horror being tempered by necessity, a new and sustained interest might be developed. Some examples were cited, and one of them referred to his campaign in Egypt. Glancing at this subject, he said: "Yes, had I gained possession of Acre I would have assumed the turban; I would have put my army in wide Turkish trousers; I would only have exposed it at the last extremity; I would have made of it my sacred battalion, my immortals. It is with Arabs, Greeks, and Armenians that I would have finished the war against the Turks. Instead of a battle in Moravia, I would have gained a battle of Issus. I would have made myself Emperor of the East, and returned to Paris by way of Constantinople." Napoleon accompanied these words with a smile, as if to indicate that he had allowed himself to recall one of the young dreams of his ardent imagination, a dream, however, which had a chance of being realized, since, according to the testimony of travellers then present in the Lebanon, a hundred thousand Christians were waiting in that district and ready on the capture of Acre to join his army.

M. W. H.

FUNDAMENTAL RELIGIOUS IDEAS.

The Chief Difference Between Christianity and Various Oriental Religions.

From the Independent.

It is difficult for those trained in Western modes of thought to define clearly what the Oriental thinkers of past centuries have meant by what we call metempsychosis, or "the transmigration of soul."

The difficulty arises from three circumstances: The religionists of the Orient have no very clear and well-defined expression of the doctrine; the Aryan races, as distinguished from the Semitic, seem always to have taken the doctrine for granted in all their varied forms of belief; and Christian writers are necessarily somewhat confused in their efforts to define the doctrine because of the incorrectness of their own terminology with reference to the soul life. It is only recently that Christian philosophers have attempted to distinguish between that soul-life and spirit-life as is so clearly indicated in the teaching of St. Paul when he prays that the Christians of Thessalonica may be preserved in spirit, in soul, and in body; and when, in the Epistle to the Hebrews (assuming that he is the author of that letter), he declares that the word of God is quick and powerful, and sharper than any two-edged sword, piercing even to the dividing asunder of soul and spirit.

The teaching of the New Testament would seem to imply that man is of a tripartite nature. With Hindus and Buddhists such is not the case. Nothing is more contrary to their conception of human life than the supposition that it is of a tripartite nature. With them God is life, eternally and universally diffused life. It is, therefore, confusing to employ the word "soul" in the discussion of the subject. In fact, the expression "transmigration of soul" is neither a correct rendering nor even a correct translation of the word metempsychosis. It is "transmigration of life."

The ancient Vedas of the Hindus teach that there is only one real existing life with which all material substances are identified, and from which the life of all animated beings, whether men, animals, vegetables, or even minerals and stones (for these they understand to be animated) do proceed.

The following is an extract from the Upanishads, or the philosophical section of the Vedas:

> Whatever exists within this universe
> Is all to be regarded as enveloped
> By the great Brahm, as if wrapt in a vesture.
> There is only one Being who exists.

The expression Brahm must not be confused with the Hindu Brahma, who with Vishna and Shiva constitute the Hindu Trinity; for with them the trinity is a simple emanation.

The Vedas describe what we call the living souls of mankind as proceeding from Brahm (God) just as consubstantial sparks proceed in a thousand ways from a blazing fire. Each one of these sparks having been cast into space becomes a separate entity, and environed with different conditions.

The Persian Mystics convey the same idea by likening God to a great ocean of divinity, and the soul of man to a drop from the great ocean, pure in itself, but polluted in its contact with worldly conditions.

With Brahmanical philosophers the word Atman is the self, the ego-consciousness, that something in man that says I. This Atman is conceived as a metaphysical entity behind man's sensations, thoughts, and activities. It is not the eye that sees, but the seer in the eye; it is not the ear that hears, but the hearer in the ear, &c. That mysterious being in man which says, I am this person; I possess eyes, ears, nose, tongue, &c., is only the agent of man's activity; behind it all is the Atman, or self, the mind stuff, which looks on as a spectator.

It is this peculiar conception of human existence which causes such confusion in Oriental thought and ethics with regard to the responsibility of man, for his moral and even immoral actions. Some mystics have maintained that the ego of consciousness is not responsible for the actions of the body.

It is difficult to understand the teaching of the Oriental Mystic as to the mutual relation of life and body, or, as they would say, mind and body; but there is, perhaps, some consolation in the fact that these worthies themselves are very often confused regarding the question.

Jalalud din ar Rumi, in his great work, "The Masnavi," represents the human soul as seeking admission into the sanctuary of Divinity, thus:

> One knocked at the door of Divinity, and a voice from within inquired, "Who is there?" Then he answered, "It is I." And the voice from within replied, "This house will not hold thee and me." So the door remained shut. Then he sped away into the wilderness, and fasted and prayed in solitude. Then, after a year, he returned and knocked at the door of Divinity, and the voice again demanded, "Who is there?" and the traveller replied, "It is thou." Then the door of Divinity opened wide and the traveller entered in.

In other words, he was, according to the Sufi Mystic, absorbed into the ocean of Divinity, according to Hindu philosophy he reëntered into the eternal Brahm, and, according to Gautama, the Buddha, he obtained Nirvana.

It seems to have been a characteristic of Buddhism that it swept away to some extent the Brahminical notion of a soul flitting about in order to seek an entity, and it established the doctrine of what may be called "Transmission of Character" in addition to the doctrine transmigration of life. The doctrine existed before, but Gautama emphasized it. He taught that life originally, whether it be the life of a man, a tree, or a stone, has originated just as a spark from the fire or a drop from the ocean, but that in its transit it contracts environments. In the "Deegha Nikaya," a Buddhist work, the writer states that Gautama taught that the soul and all matter is eternal, and that there is no newly existing substance. Living beings pass away, they transmigrate, they die and are born again, but they are eternal. As soon as a sentient being dies a new being is produced, according to the Karma or desert or merit of the being who has died. This state of existence is no reward or punishment, but merely the outcome of environment or association. And the causes which produce this new being are said to be *trishna*, or thirst, and *upadana*, or yearning.

The Buddhists do not say that Gautama first discovered this conception of the transmigration of character, but they maintain that he received additional light on four great truths. First, that suffering exists wherever there is life; second, that life is caused or rather sustained by volition and desire; third, that release from suffering can only be obtained by the extinction of conscious life; fourth, that this extinction can only be obtained by following in the "path." This extinction is called Nirvana, which, literally translated, is annihilation of the Buddhist. It is the *fana* of the Persian Mystic, which also means extinction. It is the *lahut* of the Arabian Mystic, which also means annihilation. It is the absorption of the Hindu, which is expressed by a variety of terms; but of course it is impossible for the Hindu to say that a soul is annihilated when it is absorbed into the self-existing Brahm.

Buddhist writers always liken Nirvana to the going out of the flame of a lamp. We Westerns would naturally say that when the flame of a candle is extinguished that the flame itself is annihilated; but not so with the Eastern Mystic, for with him nothing ceases to exist. The Persian Mystic, as I have said, likens the ultimate expiration of the soul to the return of a drop to the ocean. To Western minds that drop of water has ceased to exist as a drop. It is, therefore, useless for European and American scholars to assert, as they do, that Nirvana is not extinction. No Hindu or Buddhist writer maintains, so far as I know, that in the transit of life from one body to another, that the mind, or Atman (they do not speak of the soul), retains its individuality; but Gautama distinctly taught that it retained its character, and retained its thirst and yearning to live. To extinguish this life and this desire of life should be the object of every human being. This can be most effectually obtained by such practices as will serve to depress the thirst, yearning, or desire of the mind. Such as fixing the eyes intently and incessantly on the tip of the nose, or, what perhaps is better, to sit cross-legged on the ground and engage in abstract contemplation of the navel. The devotee who thus seeks to extinguish life is found among the yogis of the Hindus, the monks of the Buddhists, and the fakirs of the Sufis.

In these teachings the soul is likened to a traveller and the transit of the soul to the path. One teacher marks four stages in this path: humanity, spirituality, power, and extinction. Another teacher will divide the path into seven stages: service, love, seclusion, knowledge, ecstasy, truth, and union with divinity.

Prof. Max Müller, Prof. Childers, Prof. Oldenberg, Prof. Davids, and others, have written much to show, "with warm eloquence," that Nirvana is the completion and not the extinction of being. But it is merely a war of words. There is, in Hindu and Buddhist thought, no such thing as extinction of being, and it does not need the scholarship of learned professors to tell us that. But these very scholars admit that the word Nirvana does literally mean "extinction," and no Persian or Arabic scholar doubts that the words *fana* and *lahut* also mean extinction; and we surely must give the ancients credit for understanding what they intended to imply by these words. The doctrine of Metempsychosis is certainly nihilistic. It is a doctrine which conveys no belief in God and the human soul. It is without the hope of a future existence. It is pessimistic, looking upon life as an ocean of suffering, quietistic in ethics, and finding comfort only in the expectation of a final extinction into nothingness.

It is a remarkable circumstance that while so large a proportion of the human race held this doctrine of Metempsychosis, with the exception of a possible reference to it in St. John ix., 2: "Who did sin, this man or his parents?" there is absolutely no trace of it either in the Old Testament or in the New. On the contrary, Jesus Christ, who brought life and immortality to light through the Gospel, seems to have distinctly taught the perpetual existence of the "individuality" of the soul life. God is not the God of the dead but of the living, the God of Abraham, of Isaac, and of Jacob. The souls of the departed are as the angels of heaven, and the Lord Himself is described by the Apostle as having preached to the spirits in prison.

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